REMARKS

Applicants wish to express there thanks to Examiner M. Yu and Supervisory Patent Examiner Long Le for their courtesy and time regarding the telephone interview conducted September 26, 2007.

Claims 1-12, 33, 34 and 94 are pending. Claims 2-12 and 94 are dependent from claim 1 and claim 34 is dependent from claim 33. Claims 1 and 33 have been amended to recite that the gel matrix of the Invention comprises a hydrated gel. Applicants submit that the Amendment results in no substantive change; the term gel is used in the Application to refer only to hydrated gels. See ¶ 43 of the specification. However, the Amendment is made to expressly distinguish the gel of the Invention from a "Sol-Gel."

The Office Action mailed June 5, 2007, has rejected claim 1 under 35 U.S.C. 103(a) over Halas (U.S. patent No. 6,778,316) in view of Leonard (U.S. patent No. 7,029,631). Applicants respectfully request reconsideration of the rejection in view of the Amendment and these remarks.

Halas is alleged to teach a gel comprising SERS enhancing nanoparticles. In particular Halas teaches using a "silica sol-gel matrix." Col. 6, l. 11. Halas is acknowledged not to teach the use of a gel that is suitable for size sieve molecules. This defect is allegedly supplied by Leonard who allegedly teaches that agarose and polyacrylamide gels and sol-gels can be used to contain ligands and receptors.

The Office Action then states at p. 2 that

> It would have been obvious to one having ordinary skill in the art at the time the invention was made to include as the gel of Halas et al. an agarose or polyacrylamide gel instead of a sol-gel . . .. One having ordinary skill in the art would have been motivated to make such a change as a mere alternative and functionally equivalent gel technique and since a similar matrix structure would be obtained. The use of alternative and functionally equivalent techniques would have been desirable . . ..

Applicants respectfully traverse. The use of a polyacrylamide or agarose gel would not be a mere alternative and functionally equivalent technique to the use of the "sol-gel" of Halas. Applicants note that the claim 1 implicitly requires that the claimed gel be suitable for the separation of analyte by electrophoresis or magnetophoresis. Applicants further note that such a gel necessarily must contain an electrolyte/solvent. Indeed at ¶ 43 of the application the gels of the invention are described as "sponge like" and containing up to 99.5% water. The term gel in the specification refers to a hydrated gel. That fact is made explicit by the present amendment.

By contrast, Applicants respectfully submit that none of the matrix materials of Halas contain a solvent suitable as an electrolyte and, specifically, the sol-gel of Halas is not a solvent-containing gel at all, but rather a film that is made from such a gel. The paragraph immediately preceding the Col. 6, l. 11 specific citation states:

> Forming the thin film preferably includes depositing a matrix material onto the optical device. . . . The matrix material may be in the form of a fluid precursor during the deposition. The formation of the thin film then includes drying the fluid precursor so as to form the matrix as a solid that is preferably still gas or liquid permeable. Suitable inorganic materials include silica or other oxides that may be formed by a sol-gel process. Suitable polymeric materials include polyvinyl acetate (emphasis added).

Halas, Col. 5, l. 59- Col. 6, l. Accordingly, Applicants submit that the "silica sol-gel" cited by the Office Action is, in fact, a coating manufactured by a sol-gel process and that the removal of solvent is understood by those skilled in the art as a part of that process.

The term "sol-gel" in Halas is used as a specialized term of art referring to a type of glass or ceramic. Attached for the Examiner's convenience is a list of terms used frequently in the Sol-Gel area, as selected by the Sol-Gel Gateway, with definitions obtained from the ACADEMIC PRESS DICTIONARY OF SCIENCE AND TECHNOLOGY. The term "sol-gel coating" is defined as follows:

> A coating produced by the sol-gel process of glassmaking, in which glass is formed at low temperatures from suitable compounds by chemical polymerization in a liquid phase; a gel is formed from which

> glass may be derived by the successive elimination of interstitial liquid and the collapse of the resulting solid residue by sintering.

As further illustration of this fact, the Examiner's respectfully invited to direct his attention to U.S. patent No. 5,356,667, Col. 2, l. 61- Col. 3, l. 15, which describes the construction of a dye-containing sol-gel monolith:

> The method of making a dye laser, according to the present invention, comprises:
> (a) hydrolyzing and polycondensing one or more silicon alkoxide precursors to form a sol comprising a plurality of silica particles suspended in a liquid;
> (b) cross-linking said silica particles to form a gel;
> (c) aging said gel to forth an aged gel;
> (d) removing said liquid from said aged gel to form a dried, aged gel;
> (e) stabilizing . . . ; and
> (f) immersing said highly porous, . . . ; and
> (g) drying said impregnated silica sol-gel monolith to vaporize substantially all the solvent present within the pores of said monolith to form a substantially solvent free laser dye impregnated silica sol-gel monolith.
> (emphasis added)

Applicants request that the Examiner take note of Halas at Col. 2, ll. 26-28, which states that Halas' invention "is based on the discovery that an optical device may be used as a support for a thin film formed by resonant nanoparticles embedded in a matrix." At Col. 2, ll. 25-43, Halas describes more specifically the optical device as either a reflective device or a waveguide device. Applicants respectfully submit that there are no circumstances under which a gel of the type that is suitable for molecular sieving by electrophoresis or magnetophoresis can be applied to the inner surface of a wave guide or the reflective surface of an optical device with the expectation that the device will continue to operate as before.

The device of Halas having a mirror or waveguide modified as envisioned in the Office Action would be inoperable as an optical device. Such a hydrated gel is most emphatically not "a mere alternative and functional equivalent technology" to the dried films described by Halas as being suitable for his invention. Applicants submit that, at a minimum, the surface of such a gel cannot, by routine methods, be constructed or

maintained within the tolerances required to be "optically flat." When not constructed within such tolerances the device would be inoperable inoperable.

Claims 2-12, 33, 34 and 94 were rejected over Halas and Leonard as above in view of secondary references Schultz (U.S. patent No. 6,180,415) and Mirkin (US 203/0211488). Applicants respectfully request reconsideration of the above rejections on the grounds as apply to claim 1.

CONCLUSION

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

The Examiner is respectfully requested to contact the undersigned at the telephone number indicated below if the Examiner believes any issue can be resolved through either a Supplemental Response or an Examiner's Amendment.

Dated: October 4, 2007

Respectfully submitted,

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